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09/781,187

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10/03/2008

EXAMINER

PHAN, HUY Q

ART UNIT

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2617

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10/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 09/781,187 | Applicant(s) OGINO ET AL. | |
| | Examiner HUY Q. PHAN | Art Unit 2617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-19 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/29/2008 has been entered.

Response to Amendment

2. This Office Action is in response to Amendment filed on date: 12/29/2008. Claims 1-19 and 21-25 are still pending.

Response to Arguments

3. Applicant's arguments with respect to claims 1-19 and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I) Claims 1-3, 6, 7, 10, 11, 15, 16, 19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon (US 6,405,047; previously cited) in view of Watters (US 6,230,018).

Regarding claim 1, Moon discloses a method of furnishing a location service (fig. 3 and col. 5, lines 1-6) comprising:

transmitting a specific signal pattern at given intervals (“at different time points” col. 3, lines 14-32 and/or “periodically” col. 4, lines 28-37) from at least three base stations (fig. 3 and col. 5, lines 1-6), wherein a location of a mobile terminal or station that receives said signal pattern is located by using positional information about said base stations (fig. 3 and col. 5, lines 1-6), sending timing or information on a phase shift from reference time of each said signal pattern from said base stations (figs. 2-3 and col. 4, lines 28-50), and signal pattern receiving time information (fig. 4, col. 4, lines 51-67).

But, Moon does not particularly disclose deliberately making a change to the sending timing of said signal pattern from at least one of said base stations; and responsive to the change of the sending timing of the signal pattern, notifying said mobile terminal or station of an altered reference time offset or information on a phase shift from the reference time of said sending timing or updated sending timing of said signal pattern. However in analogous art, Watters teaches deliberately making a change to the sending timing of said signal pattern from at least one of said base stations (“adjust the offset timing” see col. 11, lines 22-41 and/or “adjusted” see col. 13, lines 20-

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26); and responsive to the change of the sending timing of the signal pattern (“synchronization” see col. 11, lines 27-37 and col. 13, lines 20-26), notifying said mobile terminal or station of an altered reference time offset or information on a phase shift from the reference time of said sending timing or updated sending timing of said signal pattern (“broadcast by the base station” see col. 11, lines 19-37). Since, Moon and Watters are related to the method of location determination for the mobile terminal and/or specifically they both are concerned about the mobile terminal receiving the location information signals from the base stations; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon as taught by Watters for purpose of increasing the accuracy in location determination of the mobile terminal as of the base station able to determine the offset timing (or synchronize error) and make the adjustment in order to begin a signal transmission period at the same instant with another base stations (see abstract, col. 11, lines 22-41 and/or col. 13, lines 20-26).

Regarding claim 2, Watters further discloses the method of furnishing a location service according to claim 1, wherein in response to a request issued from said mobile terminal or station to at least one of said base stations (col. 5, lines 37-54), said altered reference time offset or updated sending timing of said signal pattern is sent to said mobile terminal or station (fig. 6, see “request” and “response”).

Regarding claim 3, Moon further discloses the method of furnishing a location

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service according to claim 2, wherein said altered reference time offset or updated sending timing of said signal pattern is sent to said mobile terminal or station (fig. 6, see "request" and "response") after receiving information identifying said mobile terminal or station together with said request, and verifying the identification of said mobile terminal or station ("mobile station's PN sequence"; see col. 5, lines 43-54).

Regarding claim 6, Watters further discloses the method of furnishing a location service according to claim 1, wherein the sending timing of said signal pattern from at least one of said base stations is changed regularly ("broadcast by the base station" see col. 11, lines 19-37).

Regarding claim 7, Watters further discloses the method of furnishing a location service according to claim 1, wherein said base stations include at least three base stations (col. 9, lines 48-53) each of the base stations broadcasts positional information about a position of the broadcasting base station and neighboring base stations over a broadcast channel or control channel in response to a request received from the mobile terminal or station (col. 12, lines 18-37).

Regarding claim 10, Moon further discloses a method of furnishing a location service (fig. 3 and col. 5, lines 1-6) wherein a location of a mobile terminal or station is determined using sending timing of signal patterns transmitted from a plurality of base stations (figs. 2-3 and col. 4, lines 28-50), and receiving timing of said signal patterns at

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the mobile terminal or station ("at different time points" col. 3, lines 14-32 and/or "periodically" col. 4, lines 28-37).

But, Moon does not particularly disclose the method comprising the steps of deliberately making a change to the sending timing of a specific signal pattern of radio waves transmitted at given intervals from a base station regularly; and notifying the mobile terminal or station of an altered reference time offset of said sending timing or updated sending timing of said signal pattern. However in analogous art, Watters teaches deliberately making a change to the sending timing of a specific signal pattern of radio waves transmitted at given intervals from a base station regularly ("adjust the offset timing" see col. 11, lines 22-41 and/or "adjusted" see col. 13, lines 20-26); and notifying the mobile terminal or station of an altered reference time offset of said sending timing or updated sending timing of said signal pattern ("broadcast by the base station" see col. 11, lines 19-37). Since, Moon and Watters are related to the method of location determination for the mobile terminal and/or specifically they both are concerned about the mobile terminal receiving the location information signals from the base stations; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon as taught by Watters for purpose of increasing the accuracy in location determination of the mobile terminal as of the base station able to determine the offset timing (or synchronize error) and make the adjustment in order to begin a signal transmission period at the same instant with another base stations (see abstract, col. 11, lines 22-41 and/or col. 13, lines 20-26).

Regarding claim 11, Moon further discloses the method of furnishing a location service according to claim 10, wherein the identification of said mobile terminal or station is verified ("mobile station's PN sequence"; see col. 5, lines 43-54) and said mobile terminal or station is notified of the altered reference time offset of said sending timing or updated sending timing of said signal pattern (fig. 6, see "request" and "response").

Regarding claim 15, Moon discloses a method of furnishing a location service (abstract) comprising:

sending timing of a specific signal pattern of radio waves transmitted at given intervals from a base station regularly or at irregular intervals (figs. 2-3, col. 4, lines 27-67); calculating the location of a mobile terminal or station, based on the data on receiving timing of said signal pattern received at said mobile terminal or station (fig. 4, col. 4, lines 50-67 and col. 10, lines 1-9); and notifying said mobile terminal or station of a result of calculating step (col. 10, lines 1-9).

But, Moon does not particularly disclose deliberately making a change to the sending timing of said signal pattern from at least one of said base stations. However in analogous art, Watters teaches deliberately making a change to the sending timing of said signal pattern from at least one of said base stations ("adjust the offset timing" see col. 11, lines 22-41 and/or "adjusted" see col. 13, lines 20-26). Since, Moon and Watters are related to the method of location determination for the mobile terminal and/or specifically they both are concerned about the mobile terminal receiving the location

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information signals from the base stations; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon as taught by Watters for purpose of increasing the accuracy in location determination of the mobile terminal as of the base station able to determine the offset timing (or synchronize error) and make the adjustment in order to begin a signal transmission period at the same instant with another base stations (see abstract, col. 11, lines 22-41 and/or col. 13, lines 20-26).

Regarding claim 16, Moon further discloses the method of furnishing a location service according to claim 15, wherein the identification of said mobile terminal or station is verified ("mobile station's PN sequence"; see col. 5, lines 43-54).

Regarding claim 19, Moon further discloses a method for locating a mobile terminal or station (fig. 4 and its description) comprising the steps of: sending an ID of the mobile terminal or station ("mobile station's PN sequence"; see col. 5, lines 43-54). But, Moon does not particularly disclose a request for information on the sending timing of a specific signal pattern transmitted at given intervals from base stations in the vicinity of the mobile terminal or station to a base station in a zone in which the mobile terminal or station locates; and determining a location of the mobile terminal or station based on an answer from said base station in the zone in which the mobile terminal or station locates, and respective receiving timing the signal pattern from each of said base stations in the vicinity of the mobile terminal or station. However in analogous art,

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Watters teaches a request (fig. 6, see “request” and “response”) for information on the sending timing of a specific signal pattern transmitted at given intervals from base stations (“adjust the offset timing” see col. 11, lines 22-41 and/or “adjusted” see col. 13, lines 20-26) in the vicinity of the mobile terminal or station to a base station in a zone in which the mobile terminal or station locates (col. 7, lines 18-44); and determining a location of the mobile terminal or station based on an answer from said base station (fig. 6, see “request” and “response”) in the zone in which the mobile terminal or station locates, and respective receiving timing the signal pattern from each of said base stations in the vicinity of the mobile terminal or station (“broadcast by the base station” see col. 11, lines 19-37). Since, Moon and Watters are related to the method of location determination for the mobile terminal and/or specifically they both are concerned about the mobile terminal receiving the location information signals from the base stations; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon as taught by Watters for purpose of increasing the accuracy in location determination of the mobile terminal as of the base station able to determine the offset timing (or synchronize error) and make the adjustment in order to begin a signal transmission period at the same instant with another base stations (see abstract, col. 11, lines 22-41 and/or col. 13, lines 20-26).

Regarding claim 21, Moon further discloses the method of location claim 19, wherein said mobile terminal or station receives information related to positions of the base stations in the vicinity of the mobile terminal or station over a broadcast channel or

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control channel from the base station in the zone in which the mobile terminal or station locates ("broadcast by the base station" see col. 11, lines 19-37).

Regarding claim 22, Moon further discloses a location system comprising at least three base stations and one mobile terminal or station (fig. 4 and its description), wherein:

said base stations transmit a specific signal pattern at given intervals ("at different time points" col. 3, lines 14-32 and/or "periodically" col. 4, lines 28-37).

But, Moon does not particularly disclose at least one of said base stations deliberately changes the sending timing of said signal pattern; and said mobile terminal or station determines a location of the mobile terminal or station based on an altered reference time offset associated with the changed sending timing of said signal pattern or updated sending timing of said signal pattern, positional information about said base stations, and information on receiving timing of each said signal pattern from said base stations. However in analogous art, Watters teaches at least one of said base stations deliberately changes the sending timing of said signal pattern ("adjust the offset timing" see col. 11, lines 22-41 and/or "adjusted" see col. 13, lines 20-26); and said mobile terminal or station determines a location of the mobile terminal or station based on an altered reference time offset associated with the changed sending timing of said signal pattern or updated sending timing of said signal pattern, positional information about said base stations (col. 7, lines 18-44), and information on receiving timing of each said signal pattern from said base stations ("broadcast by the base station" see col. 11, lines

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19-37). Since, Moon and Watters are related to the method of location determination for the mobile terminal and/or specifically they both are concerned about the mobile terminal receiving the location information signals from the base stations; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon as taught by Watters for purpose of increasing the accuracy in location determination of the mobile terminal as of the base station able to determine the offset timing (or synchronize error) and make the adjustment in order to begin a signal transmission period at the same instant with another base stations (see abstract, col. 11, lines 22-41 and/or col. 13, lines 20-26).

II) Claims 4, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon in view of Watters and further in view of Janhonen (US-6,023,618).

Regarding claims 4, 13 and 18, Moon and Watters disclose all the limitations of claims 2, 11 and 16, respectively, except wherein the charging data for said mobile terminal or station is updated when the identification of said mobile terminal or station is verified. However in analogous art, Janhonen teaches in figure 1, wherein the charging data for said mobile terminal or station is updated (col. 1, line 66-co1.2, line 49) when the identification of said mobile terminal or station is verified (col. 1, lines 50-65). Since, Moon, Watters and Janhonen are related to the method for determining the location of the mobile station; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon and Watters as

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taught by Janhonen for purpose of increasing significantly the accuracy of billing in the wireless communication service.

III) Claims 5, 14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon in view of Watters and further in view of Havinis (US-6,671,377; previously cited).

Regarding claims 5, 14 and 23, Watters further discloses a location system comprising at least three base stations and one mobile terminal or station (col. 7, lines 18-27), wherein: said base stations transmit a specific signal pattern at given intervals (fig. 6, see “request” and “response”); at least one of said base stations deliberately changes the sending timing of said signal pattern (“adjust the offset timing” see col. 11, lines 22-41 and/or “adjusted” see col. 13, lines 20-26); said base stations send timing of said signal pattern transmitted from the base stations over at least one broadcast channel or control channel (“broadcast by the base station” see col. 11, lines 19-37); and said mobile terminal or station receives the sending timing of said signal pattern transmitted from base stations located in the vicinity of the mobile terminal or station (fig. 6, see “request” and “response”), and determines a location of the mobile terminal or station based on the information (col. 7, lines 18-27), positional information about said base stations (col. 7, lines 28-44), and information related to receiving timing of each said signal pattern from said base stations (fig. 6, see “request” and “response”). But, Moon and Watters lack to especially recite the base stations broadcast encrypted information on sending timing of said signal pattern transmitted from the base stations

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over at least one broadcast channel or control channel; and said mobile terminal or station decrypts the encrypted information on sending timing of said signal pattern transmitted from base stations located in the vicinity of the mobile terminal or station, by using a decrypting key, and determines a location of the mobile terminal or station based on the decrypted information. However in analogous art, Havinis teaches the base stations broadcast encrypted information on sending timing of said signal pattern transmitted from the base stations over at least one broadcast channel or control channel; and said mobile terminal or station decrypts the encrypted information on sending timing of said signal pattern transmitted from base stations located in the vicinity of the mobile terminal or station, by using a decrypting key, and determines a location of the mobile terminal or station based on the decrypted information (col. 5, line 45-co1.6, line 27; also see fig. 4A and its description). Since, Moon, Watters and Havinis are related to the method for determining the location of the mobile station; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon and Watters as taught by Havinis for purpose of increasing significantly the security of the wireless communication system in order to prevent the unauthorized users.

IV) Claims 8, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon in view of Watters and further in view of Patel (US 7,043,225).

Regarding claims 8, 12 and 17, Moon further discloses, wherein said mobile terminal or station is notified of said altered reference time offset or updated sending

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timing of said signal pattern (fig. 6, see “request” and “response”). But, Moon and Watters do not particularly show signal pattern on one of different precision levels according to an agreement between the owner of the mobile terminal or station and the administrator of said base stations. However in analogous art, Patel teaches signal pattern on one of different service levels according to an agreement between the owner of the mobile terminal or station and the administrator of said base stations (fig. 2 and col. 6, lines 2-41). Since, Moon, Watters and Patel are related to the wireless communication service; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon and Watters as taught by Patel for purpose of providing different service levels to the users such making the wireless communication service more affordable, since the user can accept the poor service with the cheap price.

V) Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon in view of Watters in view of Havinis and further in view of Keranen (US-6,681,099; previously cited).

Regarding claim 24, Moon and Watters disclose the location system according to claim 22, except a server for storing the information on sending timing of each signal pattern transmitted from said base stations. However in analogous art, Keranen teaches in figure 1, a server (server 15) for storing the information on sending timing of each signal pattern transmitted from said base stations (col. 3, line 45-col. 4, line 67; also see cols. 6-7). Since, Moon, Watters and Keranen are related to the method for determining

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the location of the mobile station; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Moon and Watters as taught by Keranen for purpose of improving advantageously the quality and reliability of the wireless communication service in providing the mobile station's location information.

Regarding claim 25, Moon, Watters and Keranen disclose the location system according to claim 24. Keranen further discloses wherein said server instructs said base stations to change the sending timing of signal pattern (col. 3, line 45-col. 4, line 67; also see cols. 6-7).

Allowable Subject Matter

5. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reason for the indication of allowance with the same reasons set forth in the previous Office Action mailed on 08/21/2004 (page 16).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Drane discloses a location and tracking system (see specification).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Q Phan whose telephone number is 571-272-7924. The examiner can normally be reached on 8AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Huy Q Phan/
Examiner, Art Unit 2617
Date: 09/29/2008